Q-1 Write a program to swap the two nibbles in memory location 2345H. If the number in 2345H is 89H, the number will become 98H after the execution of the program.

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| LXI H,2345H  MOV A,M  MVI B, 04H  loop: RLC  DCR B  JNZ loop  MOV M,A  HLT |

Q-2 Write  a program to check if he string stored in the memory is a PALINDROME. Example of  Palindrome  - MADAM, NOON, etc. Assume that the string ends with 0DH.  (Hint: First find the total number of bytes in a string and then check for half string with the other half. )

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| LXI D,4000H  LXI H,5000H  MVI B, 01H    find\_OD: INX D  INR B  LDAX D  CPI 0DH  JNZ find\_OD    MOV C,B  CALL intoHLpair  MOV B,C  LXI D,4000H  LXI H,5000H  CALL myequalcheck  HLT  //SWAPPING NIBBLES FROM LAST DL PAIR AND MAKING ENTRY TO FIRST HL PAIR  intoHLpair: LDAX D  CALL swapNibble  MOV M,A  INX H  DCX D  DCR B  JNZ intoHLpair  RET  //NIBBLE SWPPING FUNCTION  swapNibble: PUSH B  MVI B, 04H  swapNibbleloop: RLC  DCR B  JNZ swapNibbleloop  POP B  RET  //EQUALL CHECK LOOP  myequalcheck: LDAX D  CMP M  JNZ notpalindrome  INX D  INX H  DCR B  JNZ myequalcheck  MVI A,11H  JMP skipstep  notpalindrome: MVI A,00H  skipstep: RET |

Q-3 Eight LEDs are connected to the output port FFH. Write a code that will display the pattern 00110011   ->  11110000 -> 00001111 -> 11001100 -> 00110011 -> and so on on the LEDs/

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| //INITIALIZING DATA  LXI H,4000H  MVI M,33H  INX H  MVI M,F0H  INX H  MVI M,0FH  INX H  MVI M,CCH      //INPUT LOOP  main: LXI H,4000H  MVI B,04H  viewloop: MOV A,M  OUT FFH  CALL delay  INX H  DCR B  JNZ viewloop  JMP main  HLT  //DELAY FUNCTION  delay: PUSH H  LXI H,1000H  decLoop: DCX H  MOV A,L  CPI 00H  JNZ decLoop  MOV A,H  CPI 00H  JNZ decLoop  POP H  RET |